

GATEWAY SOUTH AND TRANSWEST EXPRESS CONCEPTUAL TECHNICAL REPORT

APPENDIX - MAPS OF STUDIED ALTERNATIVES

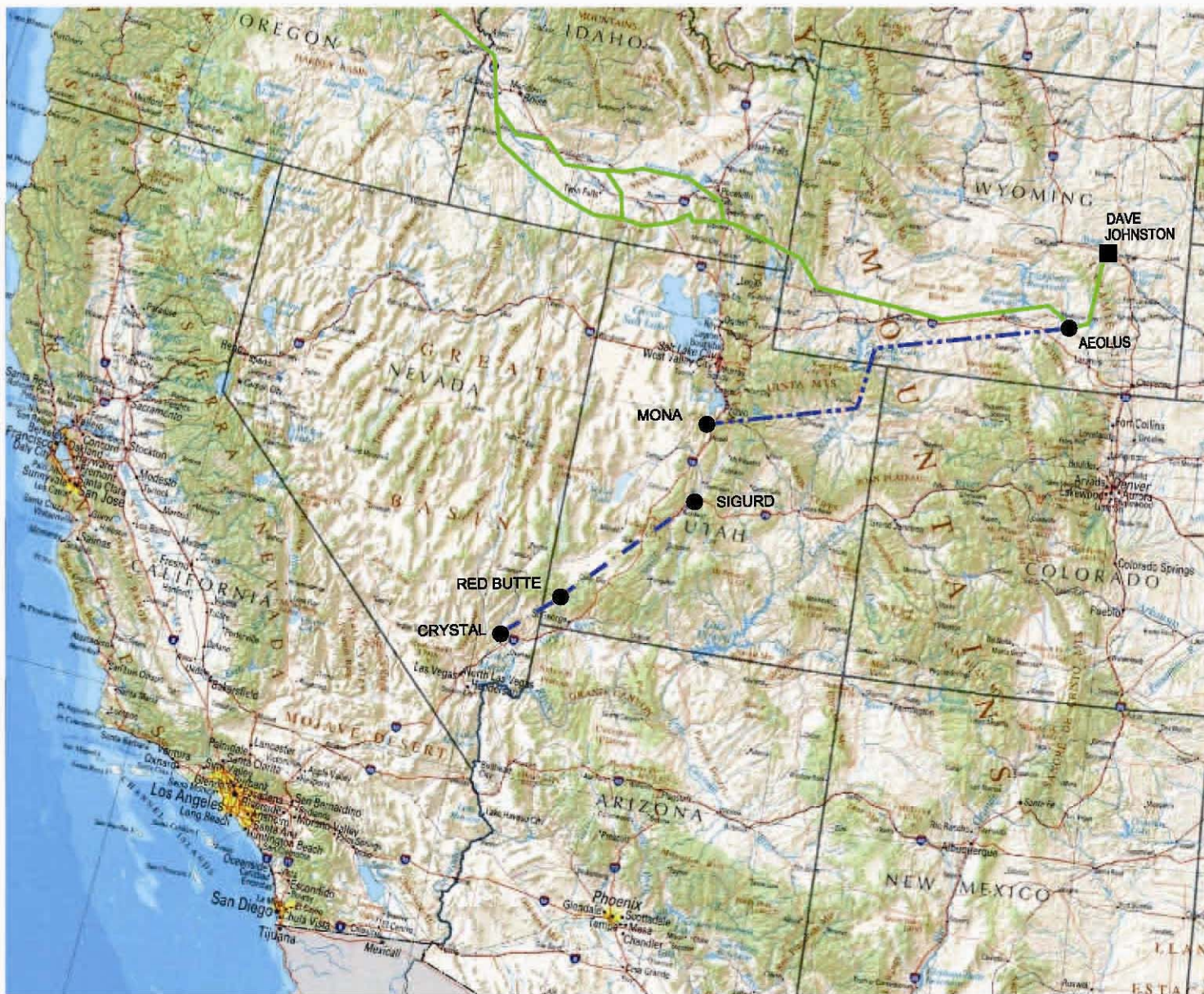
Prepared for:

**National Grid
Arizona Public Service Company
PacifiCorp
Wyoming Infrastructure Authority**

Prepared by:

Black & Veatch

January 23, 2008



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



- Gateway South ————
- Gateway West ————
- 500KV Double Circuit ————
- 345KV Single Circuit ————
- Power Plant ■
- Substation ●

Approx. Scale

200 Miles

CASE 1

Gateway South Facilities

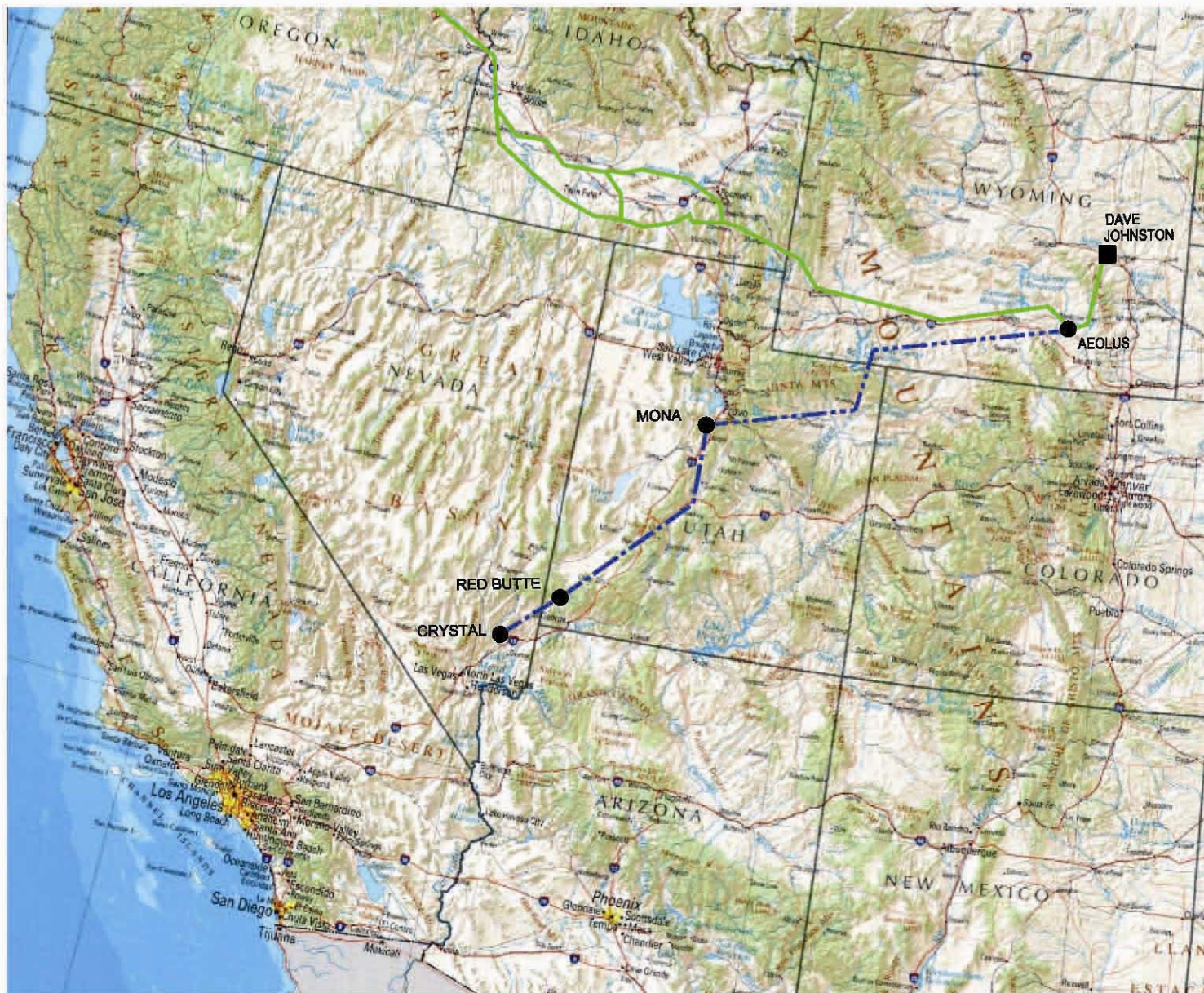
- Aeolus – Mona 500KV Double Circuit
- Sigurd – Red Butte – Crystal 345KV Single Circuit

TransWest Express Facilities

- None

Transfer Capacity

- 3000 MW Leaving Wyoming
- 3000 MW Aeolus – Mona
- 800 MW Sigurd – Crystal
- 0 TransWest Express



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



- Gateway South
- Gateway West
- 500KV Double Circuit
- 500KV Single Circuit
- Power Plant
- Substation

Approx. Scale

200 Miles

CASE 2

Gateway South Facilities

- Aeolus – Mona 500KV Double Circuit
- Mona – Red Butte – Crystal 500KV Single Circuit

TransWest Express Facilities

- None

Transfer Capacity

- 3000 MW Leaving Wyoming
- 3000 MW Aeolus – Mona
- 1500 MW Mona – Crystal
- 0 MW TransWest Express



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



TransWest Express
500KV HVDC
Power Plant
Substation

Approx. Scale

200 Miles

CASE 3

Gateway South Facilities

- None

TransWest Express Facilities

- Dave Johnson – Pinnacle Peak 500KV HVDC

Transfer Capacity

3000 MW Leaving Wyoming
0 MW Aeolus – Mona
0 MW Mona – Crystal
3000 MW TransWest Express



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



TransWest Express ———
 500KV HVDC - - - - -
 Power Plant ■
 Substation ●

Approx. Scale

200 Miles

CASE 4

Gateway South Facilities

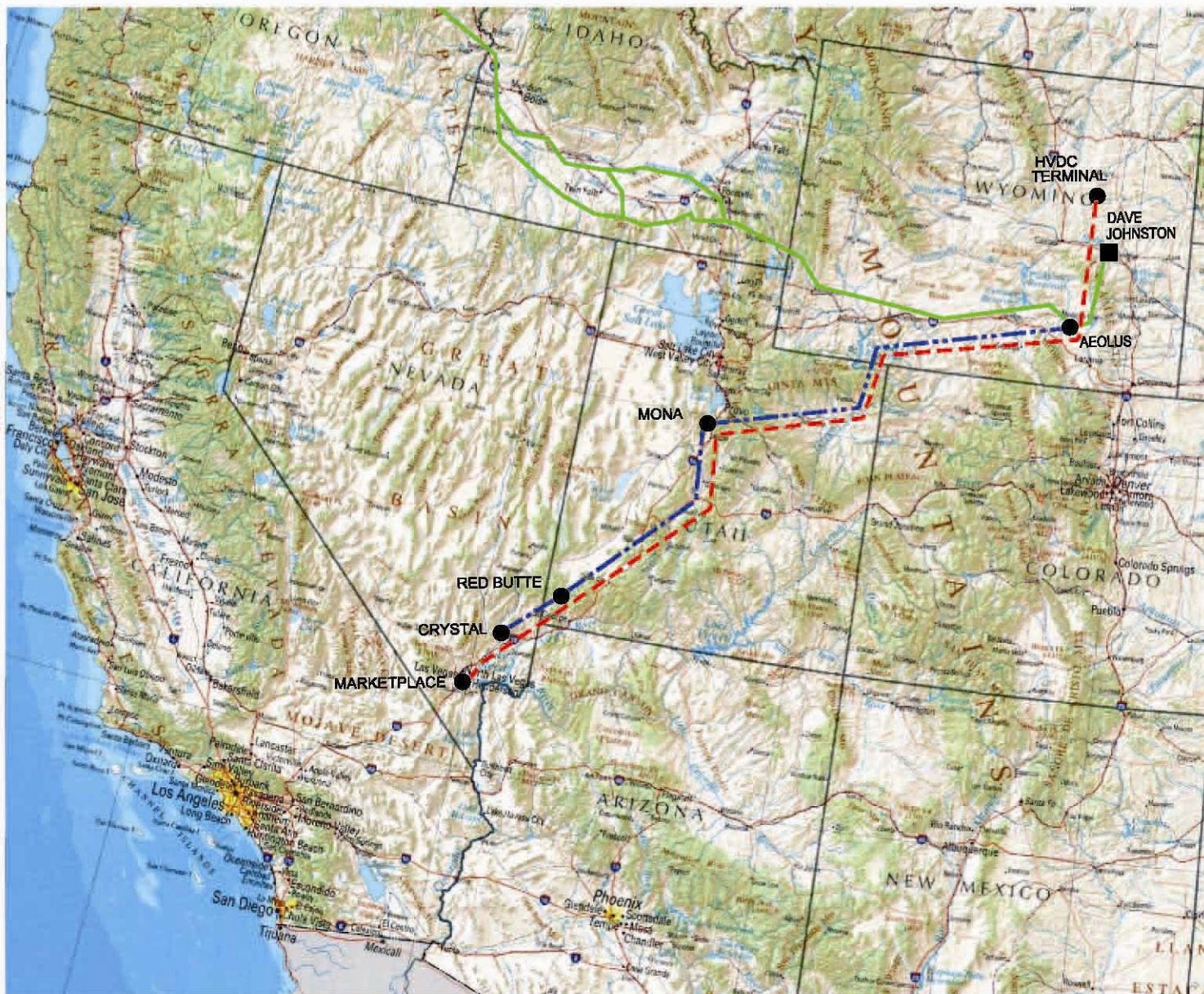
- None

TransWest Express Facilities

- Wyoming – Marketplace 500KV HVDC

Transfer Capacity

3000 MW Leaving Wyoming
 0 MW Aeolus – Mona
 0 MW Mona – Crystal
 3000 MW TransWest Express



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



- TransWest Express
- Gateway South
- Gateway West
- 500KV Double Circuit
- 500KV HVDC
- 500KV Single Circuit
- Power Plant
- Substation

Approx. Scale

200 Miles

CASE 5

Gateway South Facilities

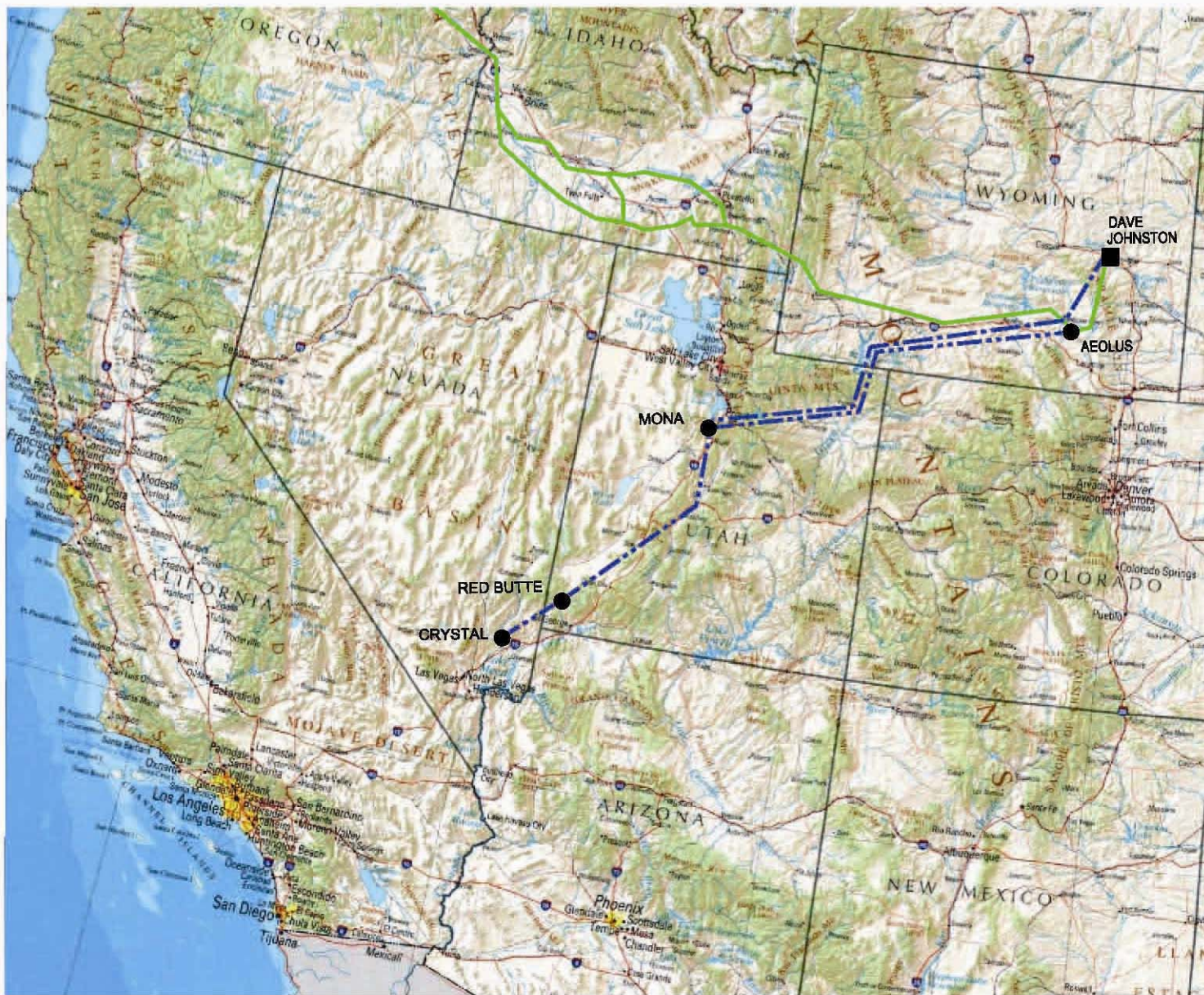
- Aeolus – Mona 500KV Double Circuit
- Mona – Red Butte – Crystal 500KV Single Circuit

TransWest Express Facilities

- Wyoming – Marketplace 500KV HVDC

Transfer Capacity

- 6000 MW Leaving Wyoming
- 3000 MW Aeolus – Mona
- 1500 MW Mona – Crystal
- 3000 MW TransWest Express



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



Gateway South
 Gateway West
 500KV Double Circuit
 500KV Single Circuit
 Power Plant
 Substation

Approx. Scale

200 Miles

CASE 6

Gateway South Facilities

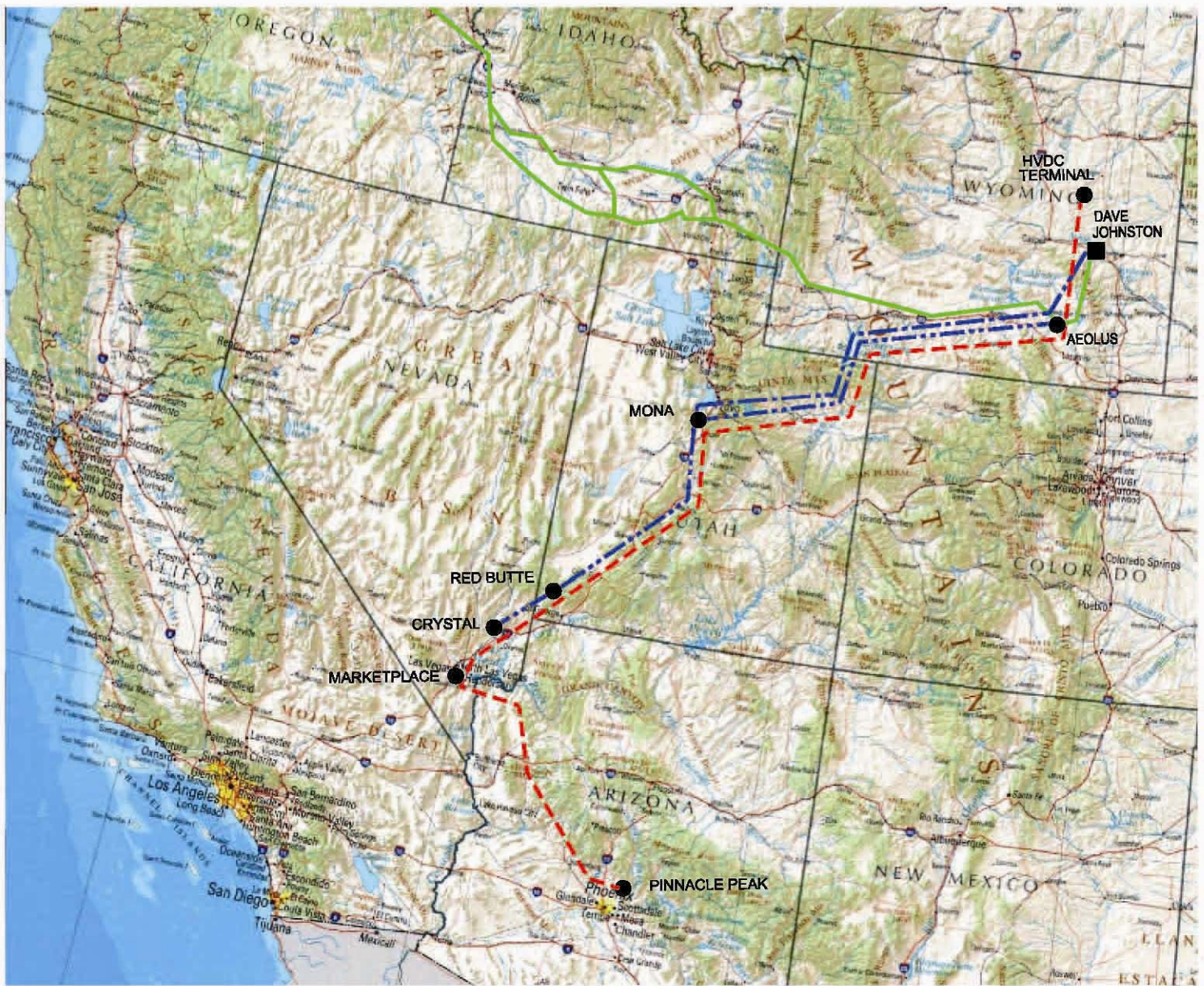
- Aeolus – Mona 500KV Double Circuit
- Mona – Red Butte – Crystal 500KV Double Circuit
- Dave Johnston – Mona 500KV Single Circuit

TransWest Express Facilities

- None

Transfer Capacity

4500 MW Leaving Wyoming
 4500 MW Aeolus/Dave Johnston – Mona
 3000 MW Mona – Crystal
 0 MW TransWest Express



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



TransWest Express	— (Red line)
Gateway South	— (Blue line)
Gateway West	— (Green line)
500KV Double Circuit	— (Solid line)
500KV Single Circuit	- - - (Dashed line)
500KV HVDC	- · - · - (Dash-dot line)
Power Plant	■ (Black square)
Substation	● (Black circle)

Approx. Scale

200 Miles

CASE 7

Gateway South Facilities

- Dave Johnston – Mona 500KV Single Circuit
- Aeolus – Mona – Red Butte – Crystal 500KV Double Circuit

TransWest Express Facilities

- Wyoming – Pinnacle Peak 500KV HVDC

Transfer Capacity

7500 MW Leaving Wyoming
 4500 MW Aeolus/Dave Johnston – Mona
 3000 MW Mona – Crystal
 3000 MW TransWest Express



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



TransWest Express
 500KV Single Circuit
 500KV HVDC
 Power Plant
 Substation

Approx. Scale

200 Miles

CASE 8

Gateway South Facilities

- None

TransWest Express Facilities

- Wyoming – Marketplace 500KV HVDC
- Marketplace – Pinnacle Peak 500kv Single Circuit

Transfer Capacity

3000 MW Leaving Wyoming
 0 MW Aeolus – Mona
 0 MW Mona – Crystal
 3000 MW TransWest Express



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



TransWest Express
 Gateway South
 Gateway West
 500KV Double Circuit
 500KV Single Circuit
 500KV HVDC
 Power Plant
 Substation

Approx. Scale

200 Miles

CASE 9

Gateway South Facilities

- Aeolus – Mona 500KV Double Circuit
- Mona – Red Butte – Crystal 500KV Single Circuit

TransWest Express Facilities

- Wyoming – Pinnacle Peak 500KV HVDC

Transfer Capacity

6000 MW Leaving Wyoming
 3000 MW Aeolus – Mona
 1500 MW Mona – Crystal
 3000 MW TransWest Express



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



TransWest Express
 Gateway South
 Gateway West
 500KV Double Circuit
 500KV Single Circuit
 500KV HVDC
 Power Plant
 Substation

Approx. Scale

200 Miles

CASE 10

Gateway South Facilities

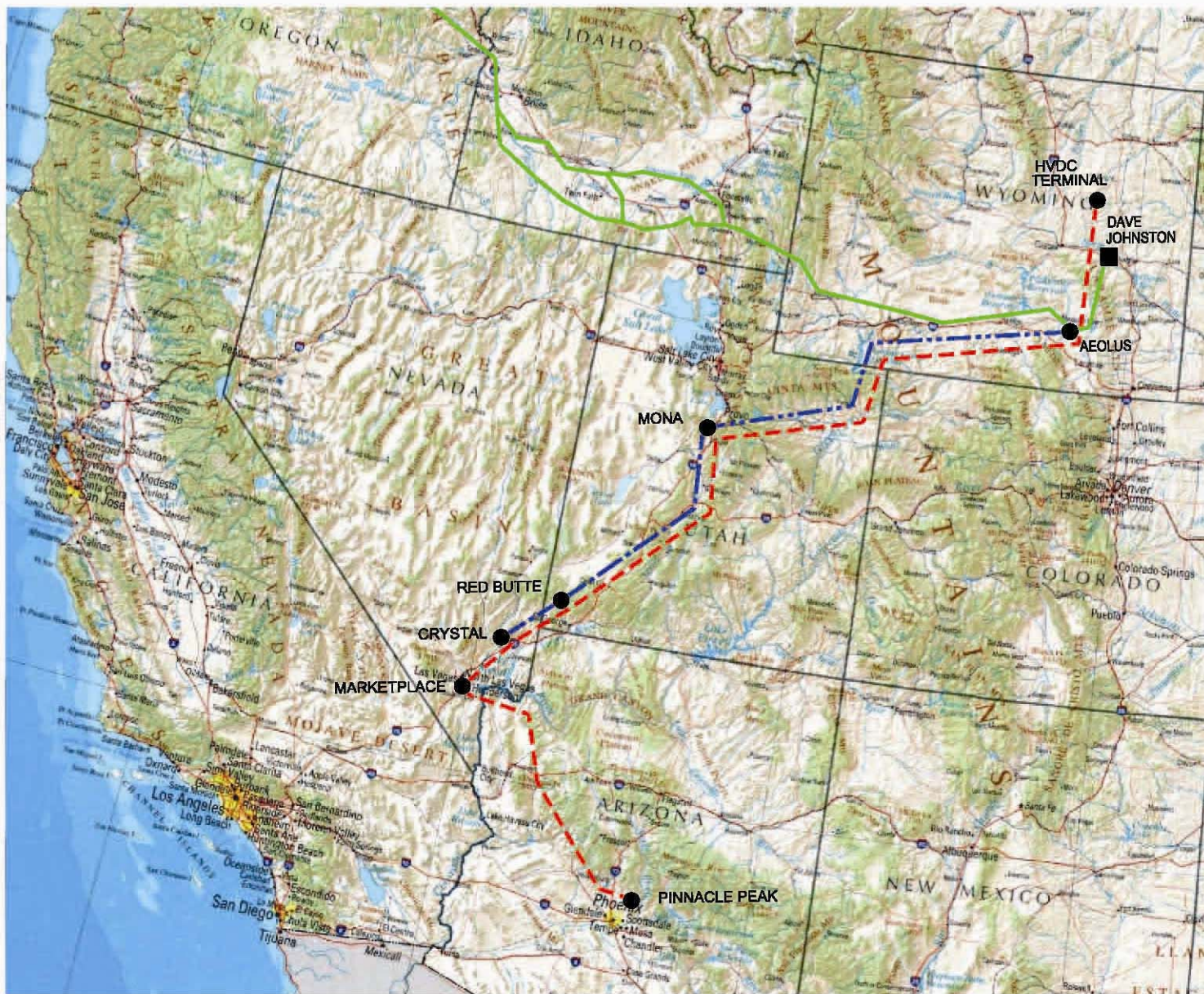
- Aeolus – Mona 500KV Double Circuit
- Mona – Red Butte – Crystal 500KV Single Circuit

TransWest Express Facilities

- Wyoming – Marketplace 500KV HVDC
- Marketplace – Pinnacle Peak 500KV Single Circuit

Transfer Capacity

6000 MW Leaving Wyoming
 3000 MW Aeolus – Mona
 1500 MW Mona – Crystal
 3000 MW TransWest Express



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



TransWest Express
 Gateway South
 Gateway West
 500KV Double Circuit
 500KV Single Circuit
 500KV HVDC
 Power Plant
 Substation

Approx. Scale

200 Miles

CASE 11

Gateway South Facilities

- Aeolus – Mona 500KV Double Circuit
- Mona – Red Butte – Crystal 500KV Single Circuit

TransWest Express Facilities

- Wyoming – Marketplace – Pinnacle Peak 500KV HVDC
- Third Terminal at Marketplace

Transfer Capacity

6000 MW Leaving Wyoming
 3000 MW Aeolus – Mona
 1500 MW Mona – Crystal
 3000 MW TransWest Express



(Routes shown are for illustration only and will be selected only following a comprehensive environmental review process)



TransWest Express	—
Gateway South	—
Gateway West	—
500KV Double Circuit	—
500KV Single Circuit	—
500KV HVDC	—
Power Plant	■
Substation	●

Approx. Scale

200 Miles

CASE 12

Gateway South Facilities

- Dave Johnston – Mona 500KV Single Circuit
- Aeolus – Mona – Red Butte – Crystal 500KV Double Circuit

TransWest Express Facilities

- Wyoming – Marketplace 500KV HVDC
- Marketplace – Pinnacle Peak 500KV Single Circuit

Transfer Capacity

- 7500 MW Leaving Wyoming
- 4500 MW Aeolus/Dave Johnston – Mona
- 3000 MW Mona – Crystal
- 3000 MW TransWest Express